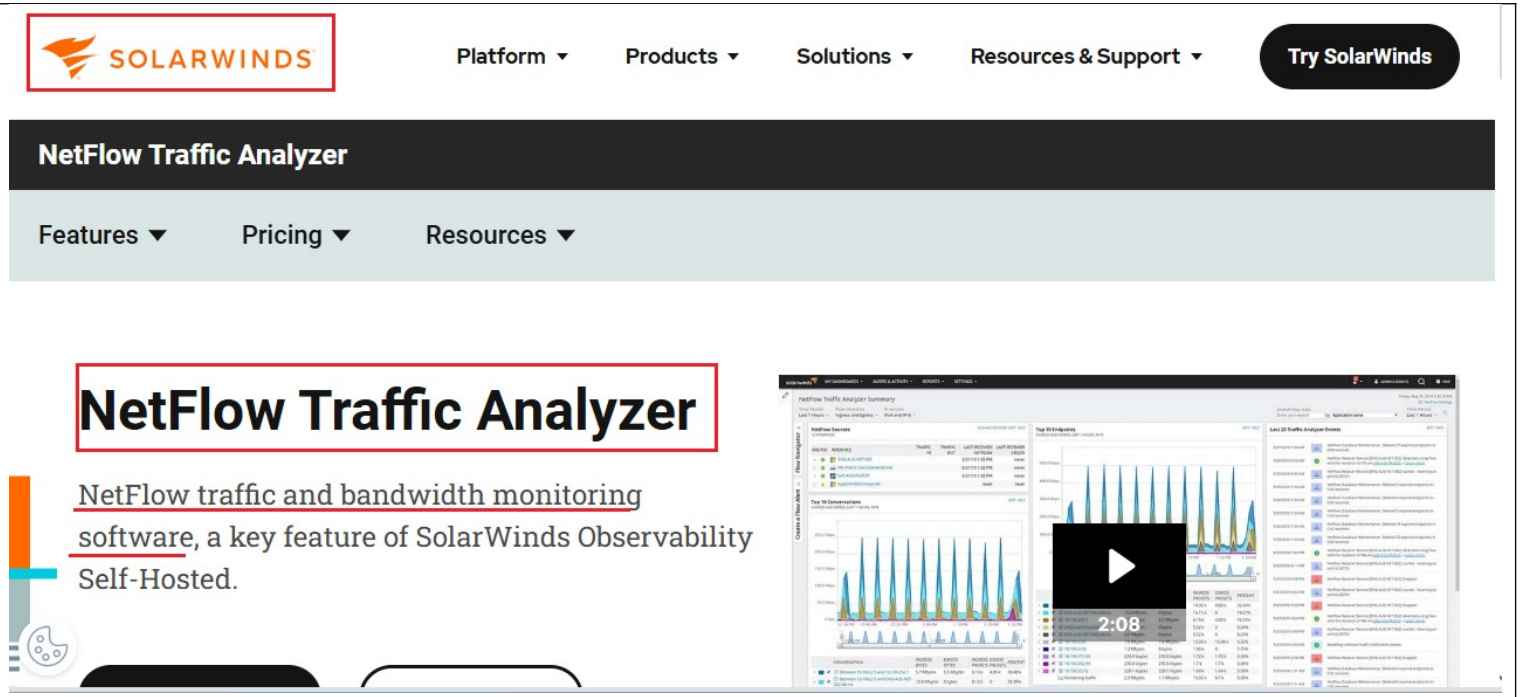
# Exhibit 2

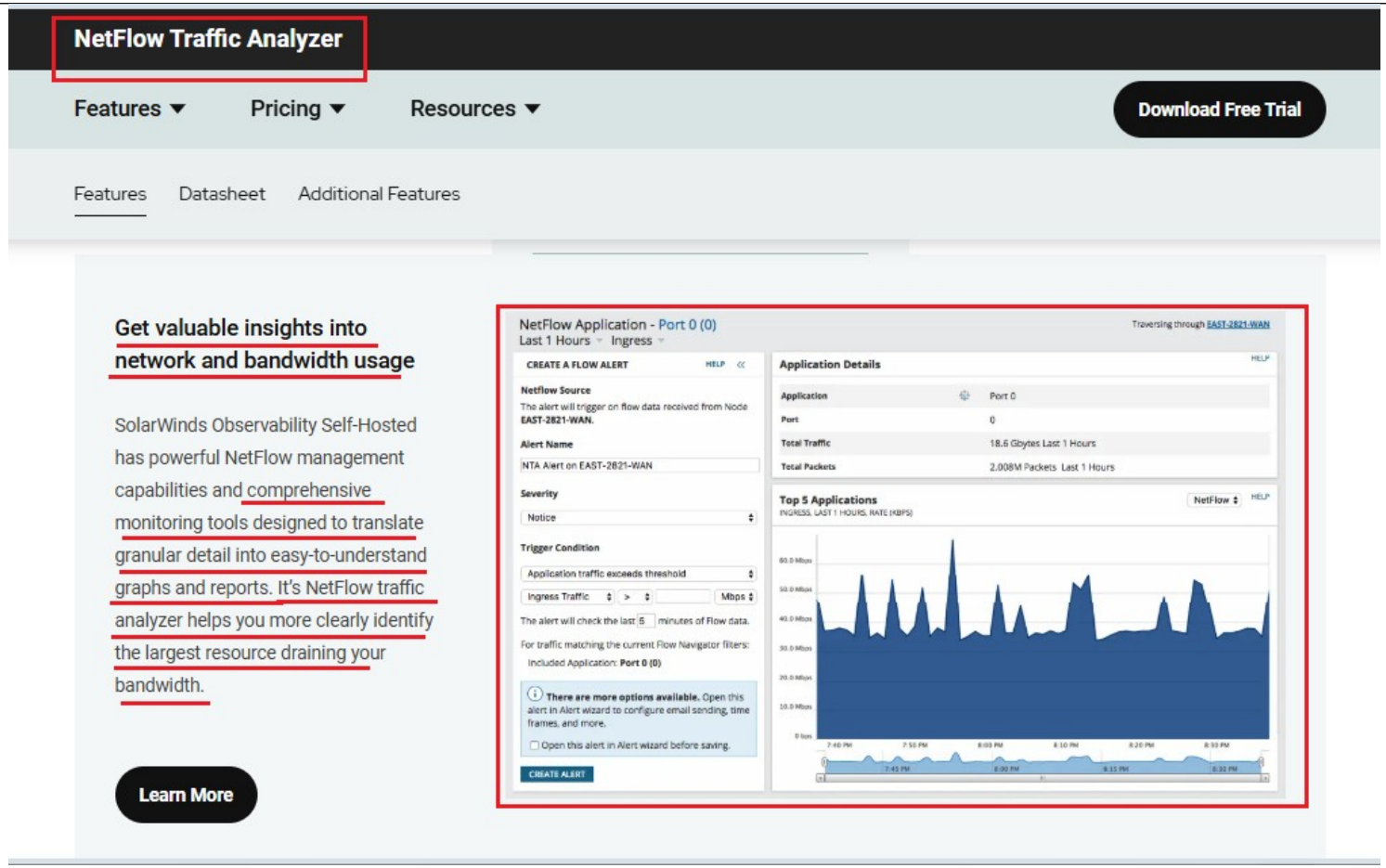
Charted Claim:

Method Claim: 1

| US10447544B2 | NetFlow Traffic Analyzer (“Accused Product”) |
|---|---|
| 1. A method comprising: receiving a request for a quality of service (QoS) associated with an application executing on a network, the QoS expressed as requested QoS parameters; | The accused product practices a method comprising: receiving a request for a quality of service (QoS) associated with an application executing on a network, the QoS expressed as requested QoS parameters (e.g. queue limit, packet weight, etc.).<br><br>As shown below, the accused product is a NetFlow Traffic Analyzer. Its capacity planning feature forecasts the bandwidth required to meet Quality of Service (QoS) service levels for business-critical applications on a network. The forecasts are used to modify QoS policies and improve traffic flow. The user can specify QoS policies to shape different classes of network traffic. A policy is configured using different parameters, for example, Queue Limit and Packet Weight. |




https://www.solarwinds.com/netflow-traffic-analyzer

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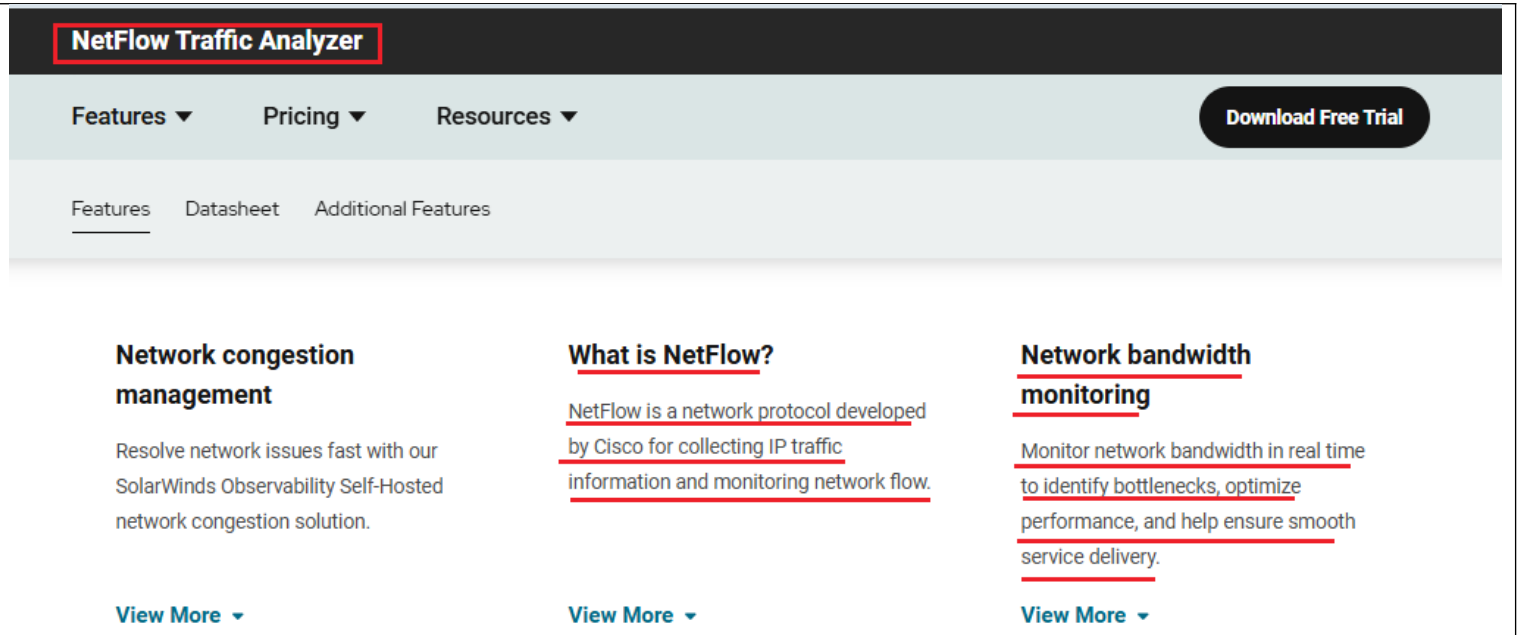
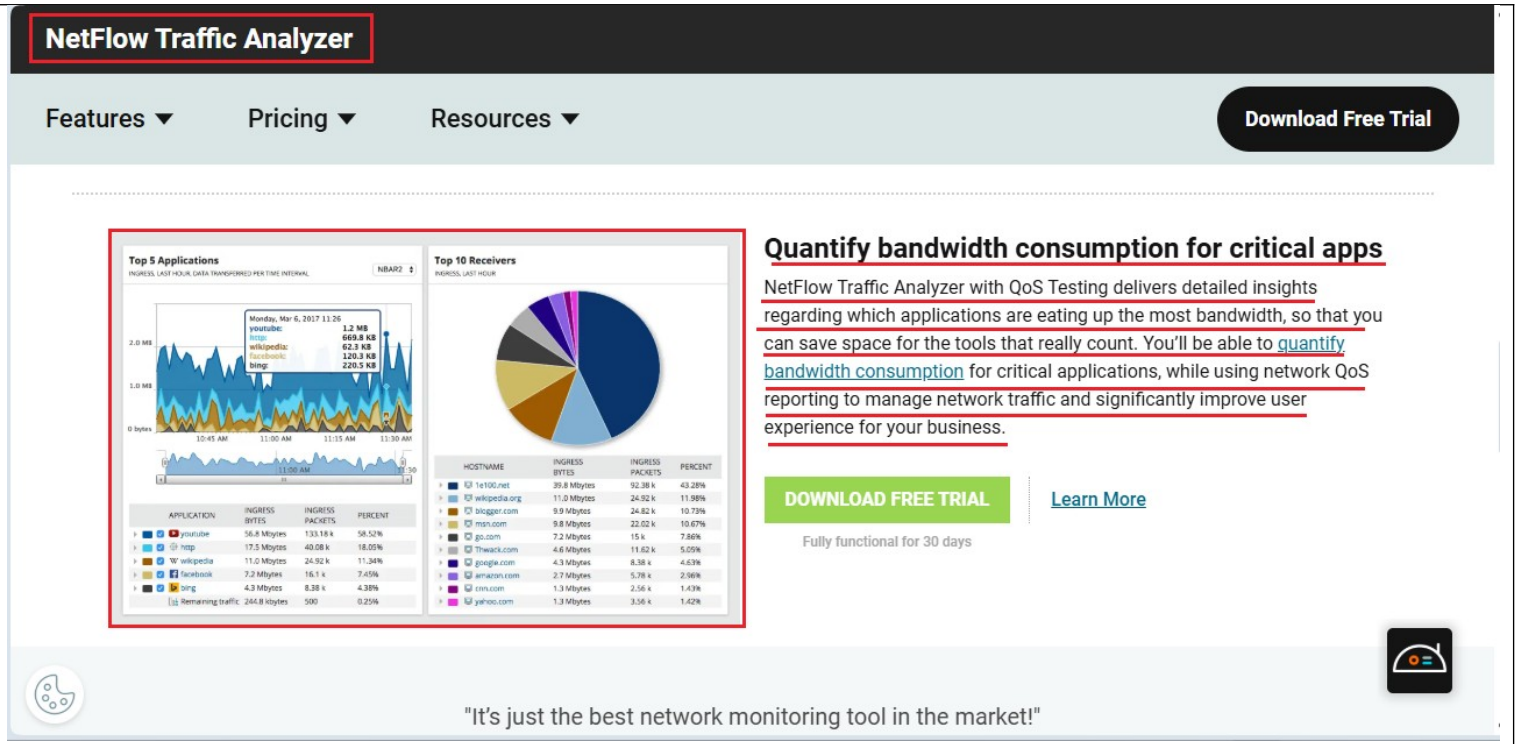


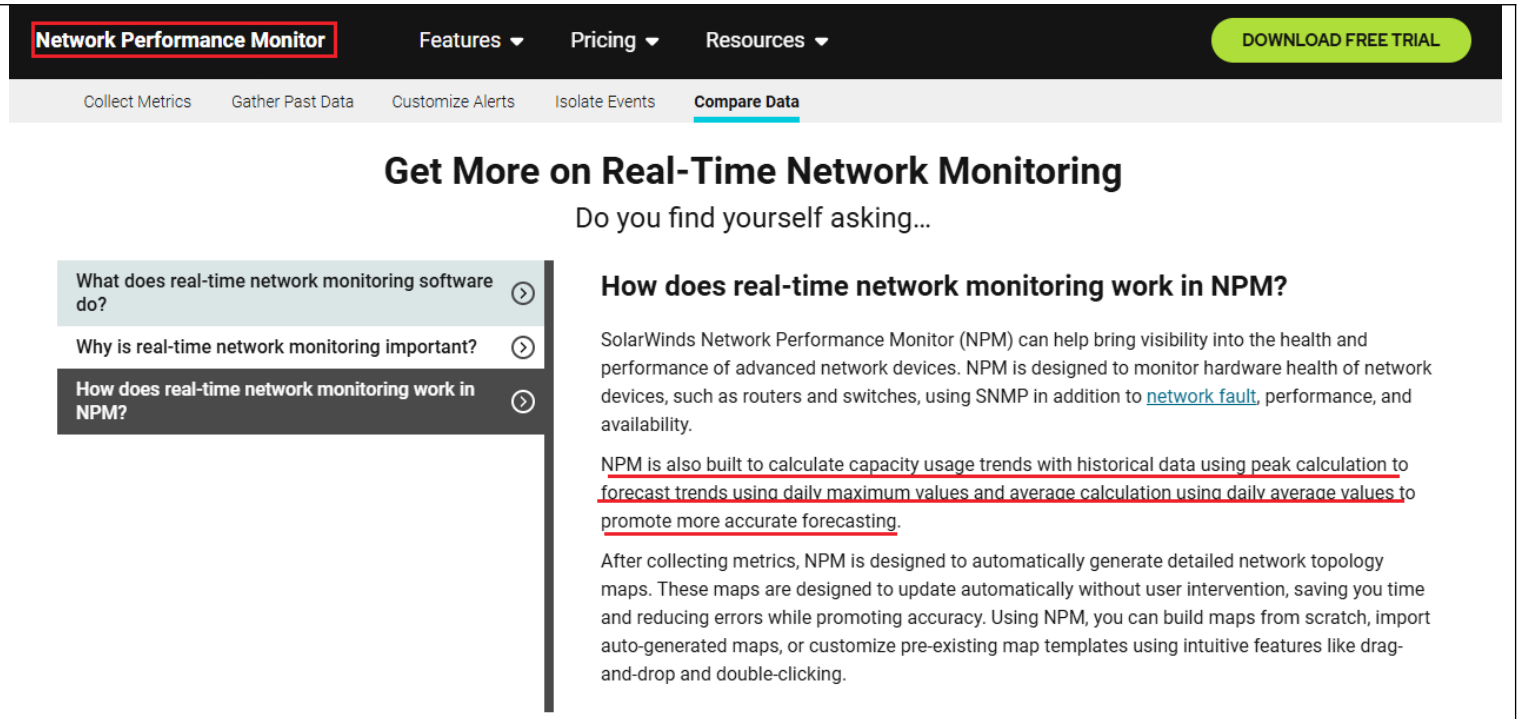

https://www.solarwinds.com/netflow-traffic-analyzer



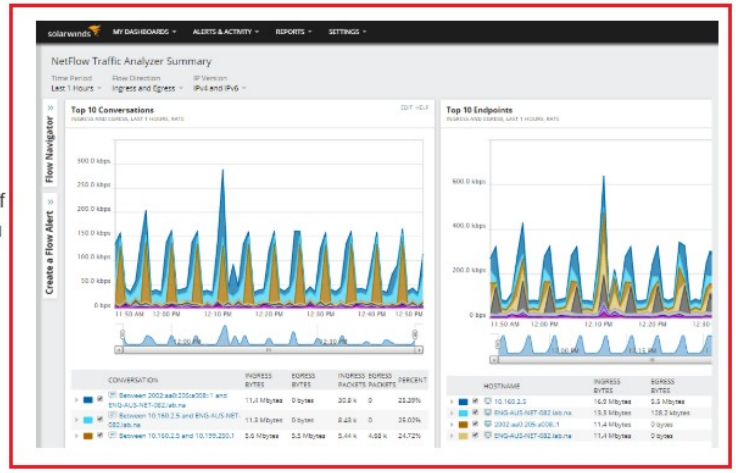

https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/network-qos-report#anchor2

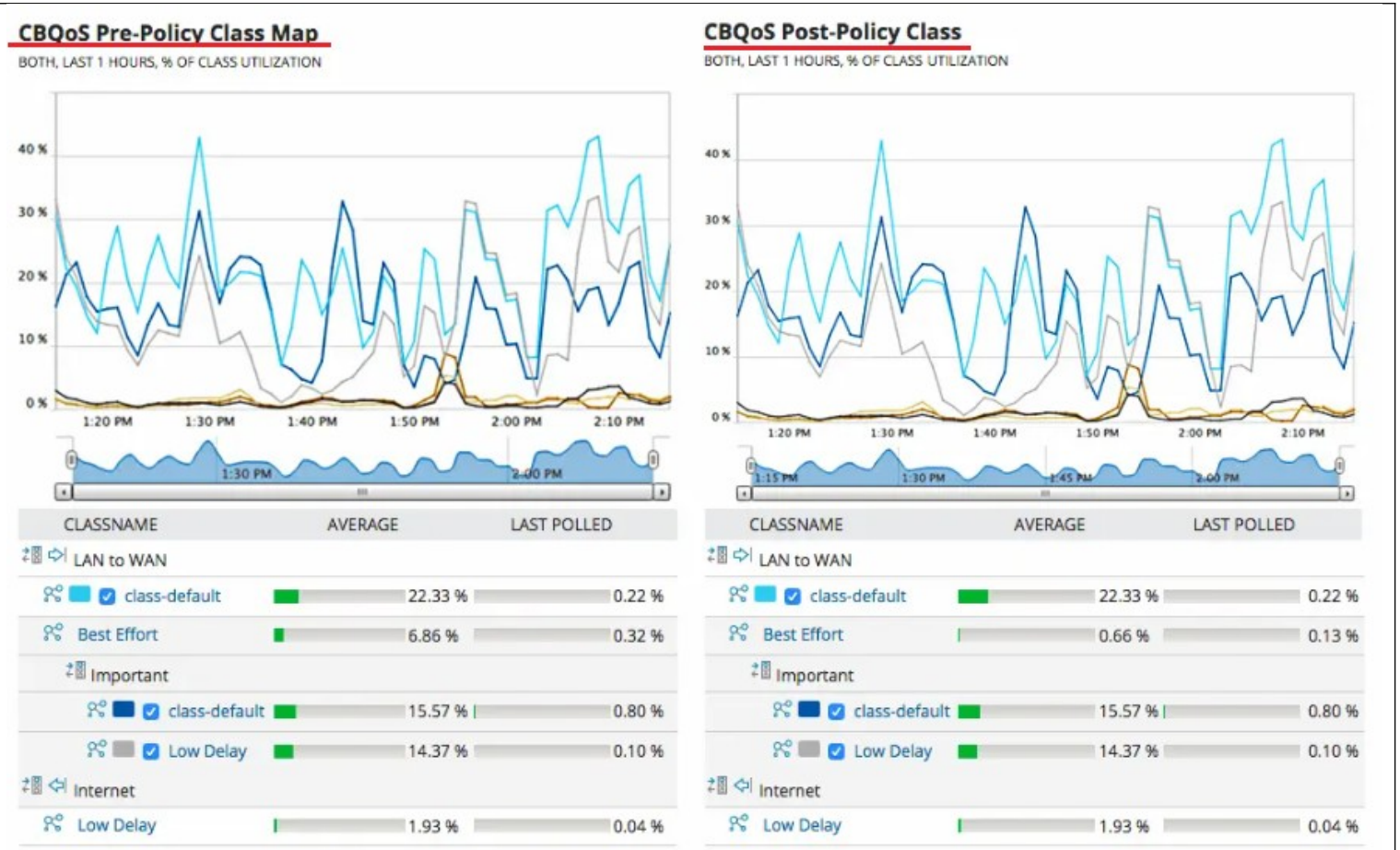
The third and most effective option includes leveraging bandwidth monitoring software to analyze network and device-specific bandwidth usage in real time with minimal manual efforts. It provides granular visibility into your organization's current and future bandwidth requirements by offering detailed consumption reports and visualizations.

https://www.solarwinds.com/resources/it-glossary/bandwidth-consumption




https://web.archive.org/web/20240416004232/https://www.solarwinds.com/network-performance-monitor/use-cases/real-time-network-monitoring

| | |
|---|---|
| | **Decongest your network and improve flow using customizable network traffic reports**<br>If your enterprise does business over video chat, poor voice or video quality caused by network congestion can hurt your productivity. NTA helps you improve traffic flow and enhance end-user experience with numerous QoS features. This network congestion solution lets you segment traffic by Class of Service methods and compare pre- and post-policy CBQoS class maps, so you can optimize your policies. Also, QoS reporting helps you verify the effectiveness of your policy over time.<br>DOWNLOAD FREE TRIAL Learn More<br>Fully functional for 30 days<br>  <br>https://web.archive.org/web/20201214091509/https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/network-congestion |




https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/network-qos-report#anchor0

```
router#enable
Password:*****
router#configure terminal
router2950(config)# policy-map GOLD
router2950(config-pmap)# class CRM
router2950(config-pmap-c)# bandwidth 3000
router2950(config-pmap-c)# queue-limit 30
router2950(config-pmap-c)# exit
router2950(config-pmap)# class DataCenter
router2950(config-pmap-c)# bandwidth 2000
router2950(config-pmap-c)# exit
router2950(config-cmap)# exit
```

*Policy is created*

*Match class to assign marking*

*Specify characteristics for the class*

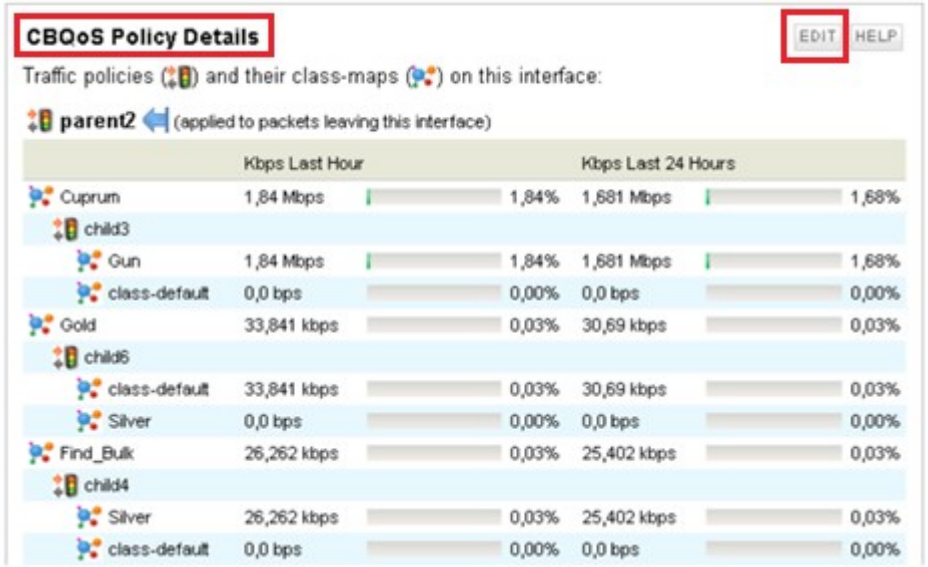
https://www.solarwinds.com/assets/solarwinds/swresources/tech-tip/configure_qos_on_cisco_routers.pdf

## Mapping a Class to a Policy

In order to map a class to a policy, you must first create the class, then the policy. Next, the class and policy must be associated. Thereafter, the action being performed must be defined to the traffic group under each class. Some examples of characteristics are:

- Bandwidth - Traffic associated to this class has a guaranteed bandwidth
- Packet Weight - Packet drop does not happen if a weight is specified
- Queue Limit - Maximum number of packets that can be in the queue

https://www.solarwinds.com/assets/solarwinds/swresources/tech-tip/configure_qos_on_cisco_routers.pdf



**CBQoS Policy Details** EDIT HELP

Traffic policies and their class-maps on this interface:

**parent2** (applied to packets leaving this interface)

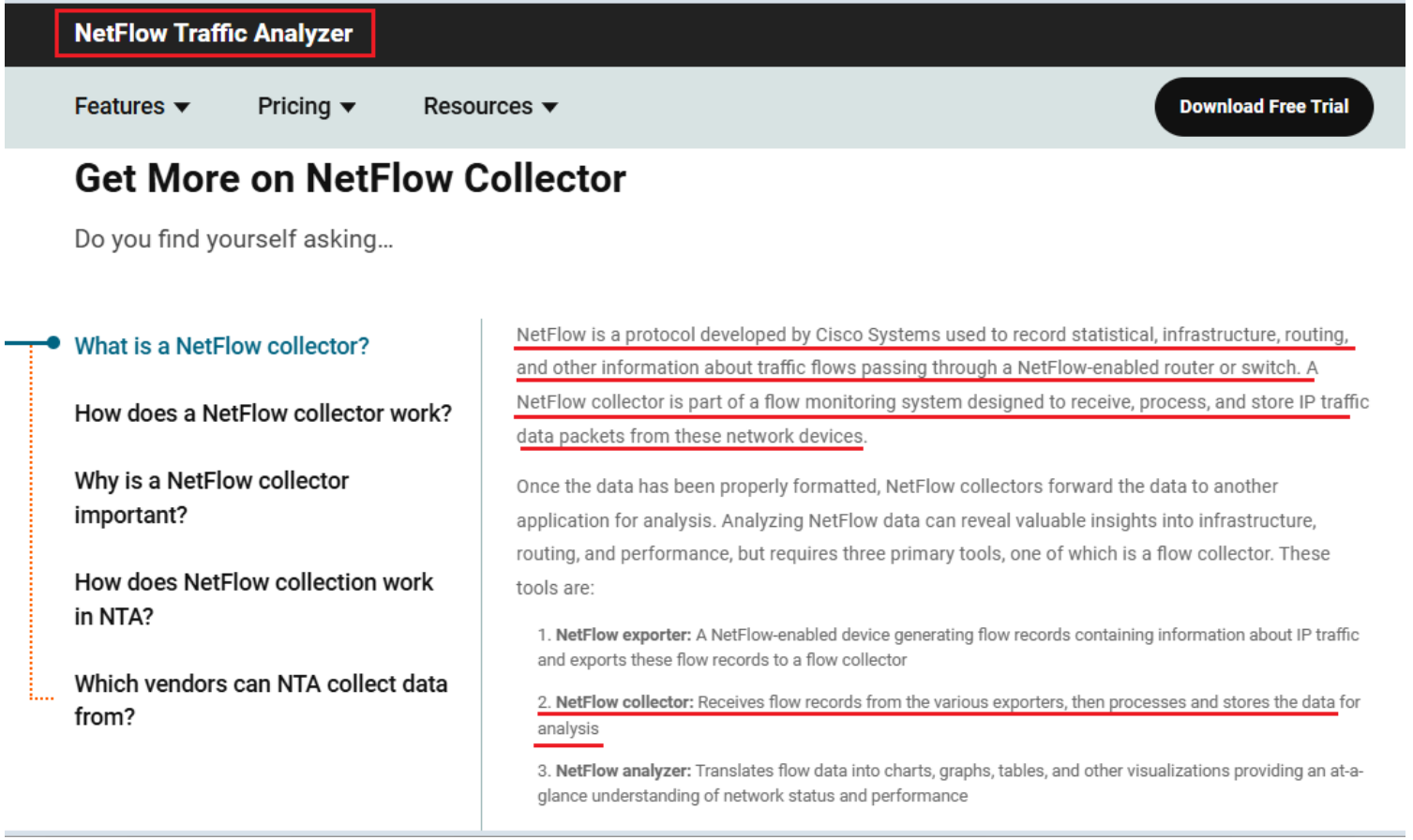
| | Kbps Last Hour | | Kbps Last 24 Hours | |
|---|---|---|---|---|
| Cuprum | 1,84 Mbps | 1,84% | 1,681 Mbps | 1,68% |
| child3 | | | | |
| Gun | 1,84 Mbps | 1,84% | 1,681 Mbps | 1,68% |
| class-default | 0,0 bps | 0,00% | 0,0 bps | 0,00% |
| Gold | 33,841 kbps | 0,03% | 30,69 kbps | 0,03% |
| child6 | | | | |
| class-default | 33,841 kbps | 0,03% | 30,69 kbps | 0,03% |
| Silver | 0,0 bps | 0,00% | 0,0 bps | 0,00% |
| Find_Bulk | 26,262 kbps | 0,03% | 25,402 kbps | 0,03% |
| child4 | | | | |
| Silver | 26,262 kbps | 0,03% | 25,402 kbps | 0,03% |
| class-default | 0,0 bps | 0,00% | 0,0 bps | 0,00% |

https://documentation.solarwinds.com/en/success_center/nta/content/nta-viewing-cbqos-data-sw1241.htm

Class-Based Quality of Service (CBQoS) is an SNMP-based, proprietary Cisco technology available on selected Cisco devices that gives you the ability to prioritize and manage traffic on your network. Using policy maps, also known as policies, the different types of traffic on your network are categorized, and then given a priority. Based on assigned priorities, only specified amounts of selected traffic types are allowed through designated, CBQoS-enabled devices.

https://documentation.solarwinds.com/en/success_center/nta/content/nta-viewing-cbqos-data-sw1241.htm

| | |
|---|---|
| | **SolarWinds® NetFlow Traffic Analyzer**<br>With SolarWinds NetFlow Traffic Analyzer (NTA), you can view network traffic segmented by classes and ensure that critical and delay-sensitive traffic, such as voice or video is prioritized and isn't dropped. In addition, it provides by-the-minute data required to monitor the bandwidth of each critical QoS segments. Further, it measures the effectiveness of your QoS policies by analyzing traffic before and after application. NTA easily quantifies bandwidth consumption for your critical applications.<br>Some QoS reports that can be obtained from NTA are:<br>• Obtain details about QoS policies applied to an interface, including nested policies and direction<br>• Information on the amount of traffic before and after the effect of each QoS policy<br>• Pre and post policy statistics available for each class, as well as for nested policies<br>• Drop traffic details – Amount of traffic dropped on an interface per QoS policy, including each QoS class<br>• Validate the performance of your QoS policies<br>https://www.solarwinds.com/assets/solarwinds/swresources/tech-tip/configure_qos_on_cisco_routers.pdf |
| obtaining operating parameters of the network; | The accused product practices obtaining operating parameters of the network (e.g., bandwidth).<br><br>As illustrated below, the NetFlow collectors obtain network traffic data for analysis. |




https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/netflow-collector

NetFlow collectors receive IP traffic packets from one or more NetFlow-enabled export devices, then ingest, pre-process, and store the data before sending it to a NetFlow analyzer. The granular steps involved include:

- Collecting network flow UDP datagrams from the routers and switches with NetFlow enabled
- Translating binary network flow into a textual or numeric format
- Reducing data volume by aggregating, collating, correlating, and selectively filtering flow data
- Saving flow data in easily transmitted files or SQL databases, which is then connected to a NetFlow analyzer application

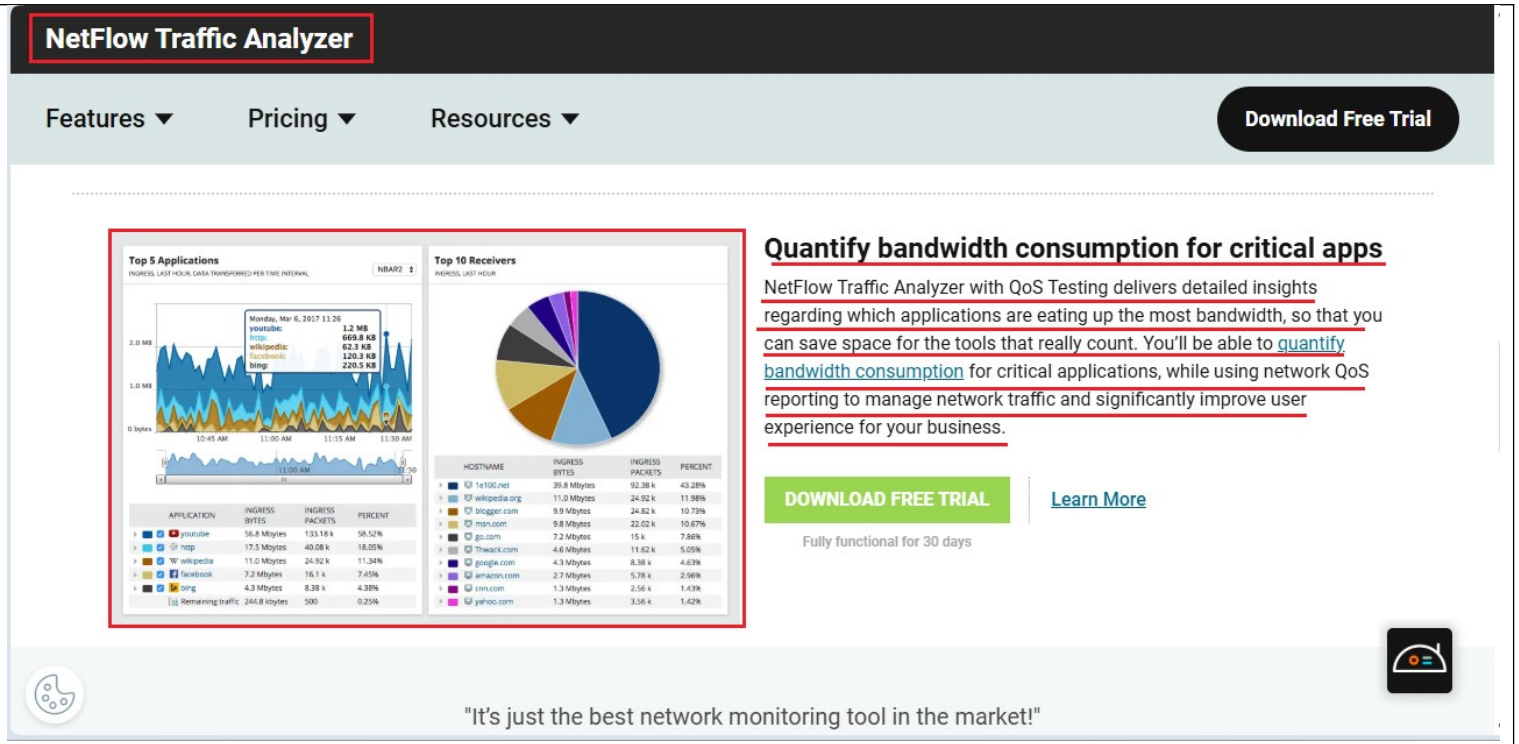
https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/netflow-collector

NetFlow collector software plays a critical role in the NetFlow monitoring and analysis process, making it possible for you to gain deeper understandings of network flow, traffic, and bandwidth consumption.

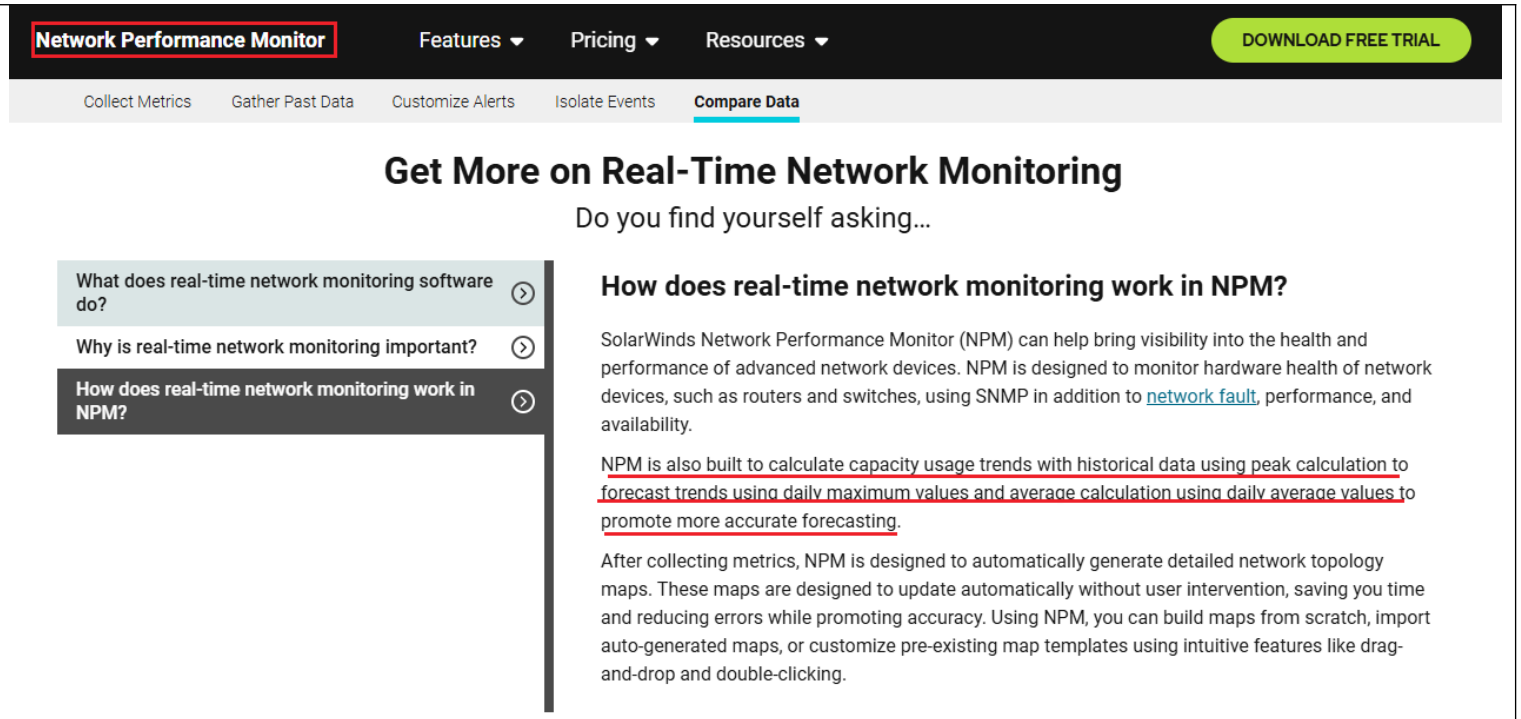
Collecting flow traffic data is the first step to gaining the visibility and actionable insights to allow more effective management of users, applications, devices, and services on a network. NetFlow collectors can also correlate flow data, making them a necessary part of troubleshooting problems related to network traffic across devices. Altogether, this combination of tools and services can help you streamline your network and security monitoring strategies for greater efficiency and effectiveness.

https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/netflow-collector

| | |
|---|---|
| | Using NetFlow collector software can also significantly increase the efficiency of network operations. Manually performing NetFlow traffic analysis can be inefficient, requiring more time to produce results with far less accuracy and granular specificity. NetFlow collectors can streamline the process by gathering traffic packets from one or more data sources, and efficiently normalizing and consolidating this information, so it's organized and usable for analysis. Since network collectors can correlate data metrics by IP address, protocol, or port, this can also enable faster insights into how different network components interact and are affected by flow patterns to help teams pinpoint which devices and services are bottlenecks on the network, in addition to more easily uncovering the root cause of a traffic slowdown.<br>https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/netflow-collector |
| modeling traffic for a group of flows in the network as probability waves based at least in part on the operating parameters to generate a model of the traffic including model flows; | The accused product practices modeling traffic for a group of flows in the network as probability waves (e.g. binary on-off form of the statistical estimations) based at least in part on the operating parameters (e.g. bandwidth) to generate a model of the traffic including model flows.<br><br>As shown below, the accused product uses the current and previous state of the network to model traffic flows, for example, modelling the effect of congestion between sites. The model forecasts the network resources required to meet the QoS service level for an app. |




https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/network-qos-report#anchor2

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| | |
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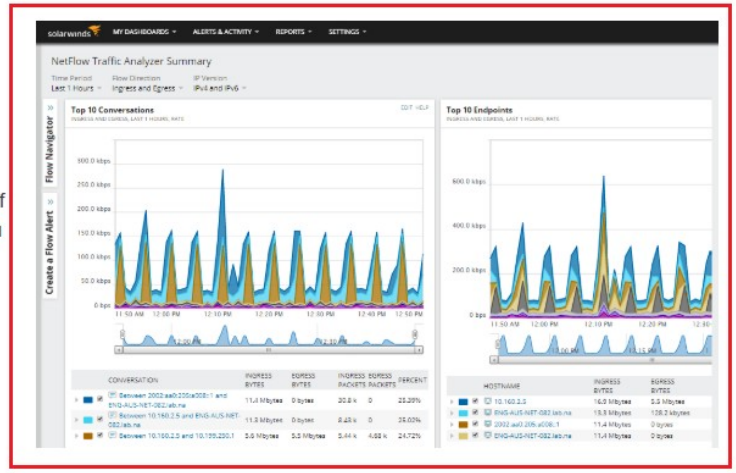
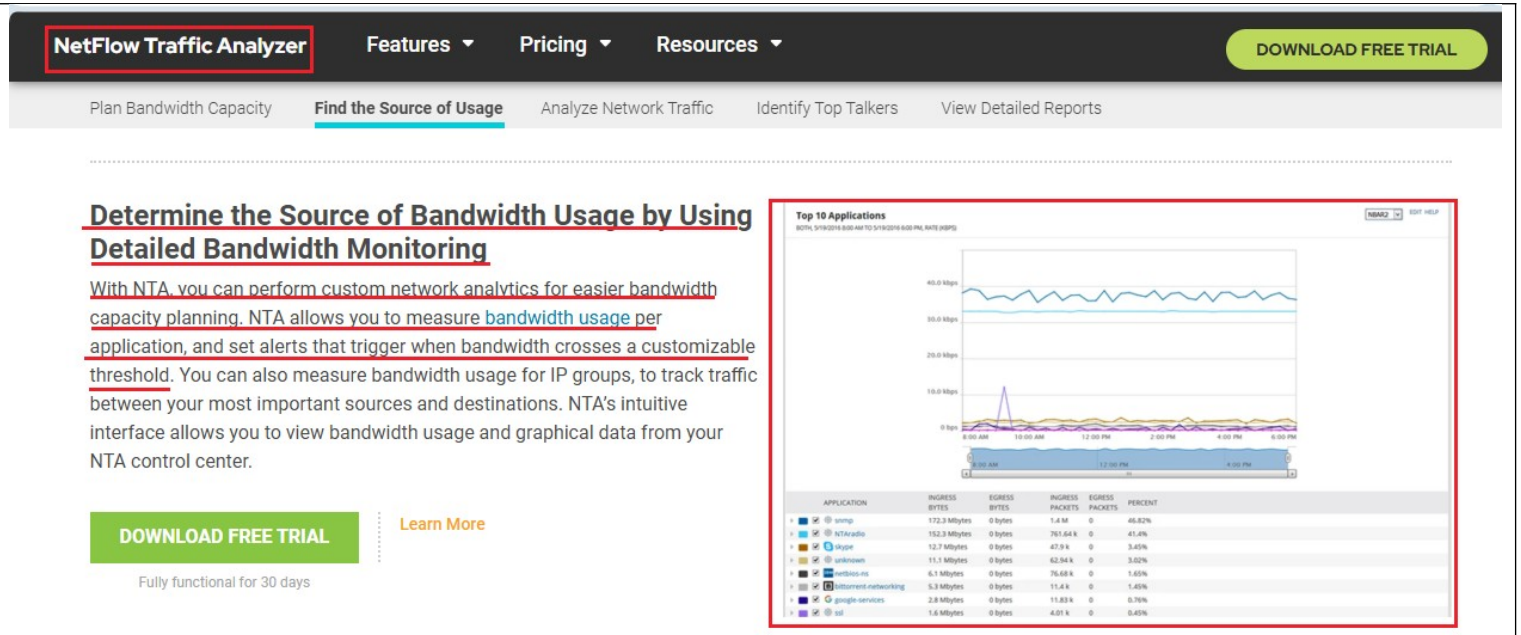
| | **Decongest your network and improve flow using customizable network traffic reports**<br>If your enterprise does business over video chat, poor voice or video quality caused by network congestion can hurt your productivity. NTA helps you improve traffic flow and enhance end-user experience with numerous QoS features. This network congestion solution lets you segment traffic by Class of Service methods and compare pre- and post-policy CBQoS class maps, so you can optimize your policies. Also, QoS reporting helps you verify the effectiveness of your policy over time.<br>DOWNLOAD FREE TRIAL Learn More<br>Fully functional for 30 days<br>  <br>https://web.archive.org/web/20201214091509/https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/network-congestion |




https://web.archive.org/web/20230716102726/https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/bandwidth-capacity-planning

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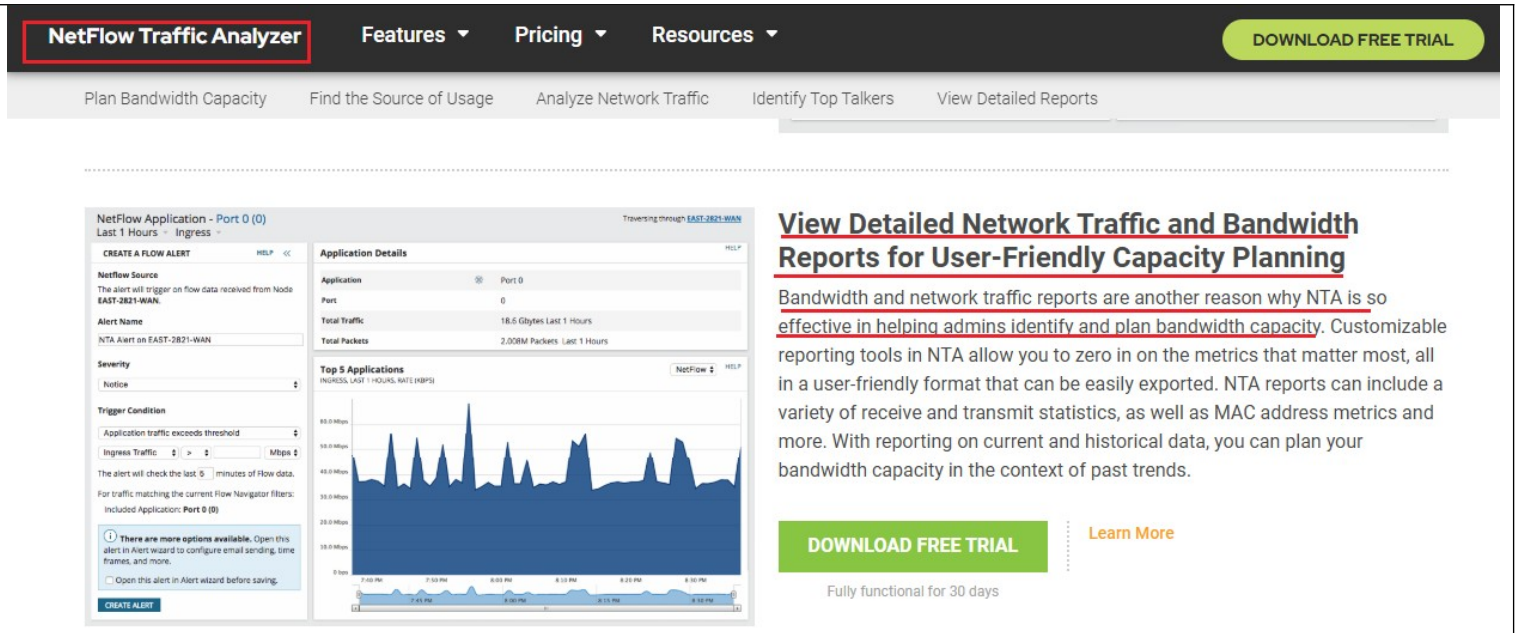
| |  <br>https://web.archive.org/web/20230716102726/https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/bandwidth-capacity-planning |
| determining QoS parameters for the network, wherein the QoS parameters for the network are expressed in terms of properties of the probability waves; and | The accused product practices determining QoS parameters for the network, wherein the QoS parameters for the network are expressed in terms of properties of the probability waves (e.g. binary on-off form of the statistical estimations).<br><br>As illustrated below, the accused product uses the parameters from capacity planning and trend analysis, it forecasts the bandwidth criteria needed to meet the QoS targets, for example, generating a policy for sizing and controlling network queues. |

## SolarWinds® NetFlow Traffic Analyzer

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- Drop traffic details – Amount of traffic dropped on an interface per QoS policy, including each QoS class
- Validate the performance of your QoS policies

https://www.solarwinds.com/assets/solarwinds/swresources/tech-tip/configure_qos_on_cisco_routers.pdf

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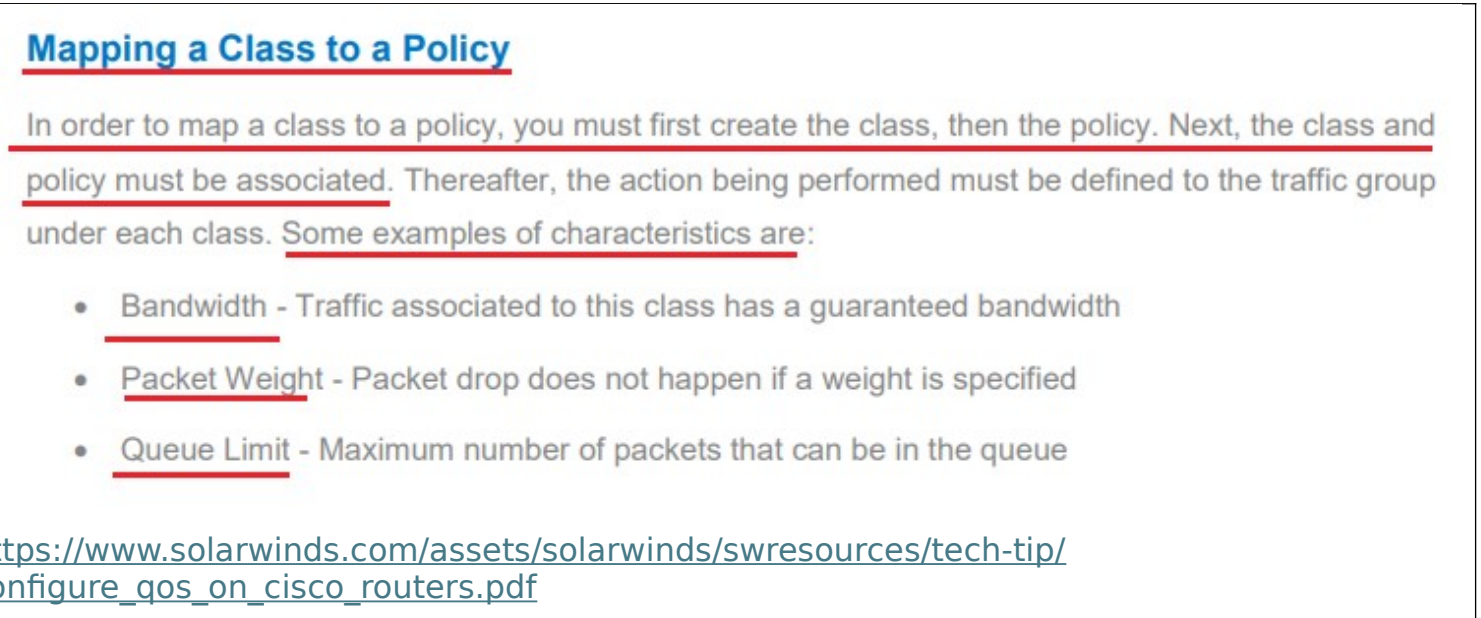
| |  <br>https://www.solarwinds.com/assets/solarwinds/swresources/tech-tip/configure_qos_on_cisco_routers.pdf |
| controlling an operational condition of the network in accordance with the model, thereby controlling the QoS parameters for the network to satisfy the requested QoS parameters. | The accused product practices controlling an operational condition of the network in accordance with the model, thereby controlling the QoS parameters for the network (e.g. bandwidth criteria) to satisfy the requested QoS parameters (e.g. queue limit, packet weight, etc.).<br><br>As shown below, the users can apply a QoS policy to a class of traffic that is used to both configure and monitor the network to ensure the QoS parameters are being met for networked applications. |

## Decongest your network and improve flow using customizable network traffic reports

If your enterprise does business over video chat, poor voice or video quality caused by network congestion can hurt your productivity. NTA helps you improve traffic flow and enhance end-user experience with numerous QoS features. This network congestion solution lets you segment traffic by Class of Service methods and compare pre- and post-policy CBQoS class maps, so you can optimize your policies. Also, QoS reporting helps you verify the effectiveness of your policy over time.

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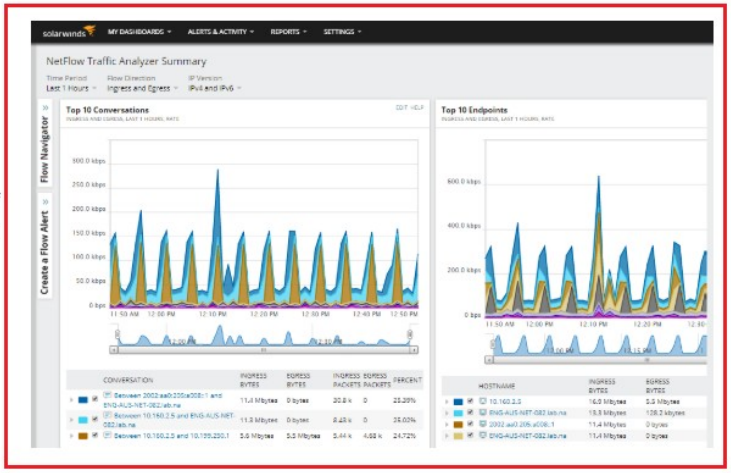


https://web.archive.org/web/20201214091509/https://www.solarwinds.com/netflow-traffic-analyzer/use-cases/network-congestion

## Mapping a Class to a Policy

In order to map a class to a policy, you must first create the class, then the policy. Next, the class and policy must be associated. Thereafter, the action being performed must be defined to the traffic group under each class. Some examples of characteristics are:

- Bandwidth - Traffic associated to this class has a guaranteed bandwidth
- Packet Weight - Packet drop does not happen if a weight is specified
- Queue Limit - Maximum number of packets that can be in the queue

https://www.solarwinds.com/assets/solarwinds/swresources/tech-tip/

| | |
|---|---|
| | configure_qos_on_cisco_routers.pdf<br><br>**CBQoS Monitoring**: Use an advanced monitoring tool that can query, "WRITE the name of the MIB," for pulling information on the class based QoS policies you have created. Querying the QoS MIB will provide information on the pre and post policy traffic statistics and queuing. In turn, you can validate the performance of your QoS policies and determine if the policies created are performing as expected.<br><br>https://www.solarwinds.com/assets/solarwinds/swresources/tech-tip/configure_qos_on_cisco_routers.pdf |